

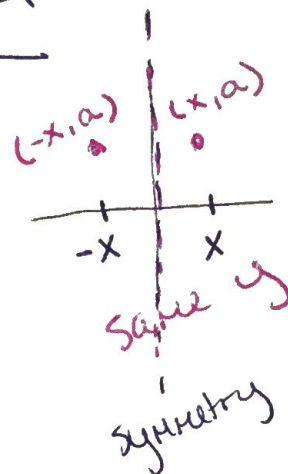
# Functions - Even, Odd, Neither

Test: Plug in  $-x$

Even: If  $f(-x) = f(x)$

$$f(x) = x^2 - 5$$

$$f(-x) = (-x)^2 - 5 = x^2 - 5$$

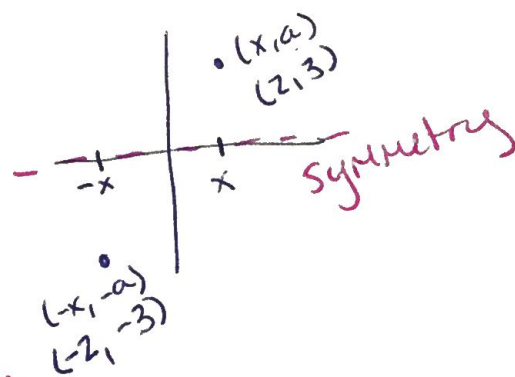


Odd:  $f(-x) = -f(x)$

$$f(x) = 5x^3 - x$$

$$f(-x) = 5(-x)^3 - (-x)$$

$$= -5x^3 + x = -f(x)$$



Ex 3:

$$f(x) = x^3 - 1$$

$$f(-x) = (-x)^3 - 1 = -x^3 - 1$$

Neither

$\stackrel{?}{=} x^3 - 1$  NO, not even  
 $\stackrel{?}{=} -x^3 + 1$  NO, not odd  
 $-f(x) = -(x^3 - 1) = -x^3 + 1$